CLCS Quick Access “Safing” Control

User Liaison Presentation 3/17/98

Prepared by R. Pierce

Purpose

- Provide the User Community information about quick access control interfaces provided at the Command & Control Workstation (CCW)
- Outline
  - Provide standard definitions
  - Describe panel functionality
  - Questions and Answers
- Background
  - CLCS project acknowledged need for quick access control
    - Quick access is different than control provided on SL-GMS displays
  - User driven concern about keyboard “function key” implementation
    - LCC-X survey to gather metrics with prototype implementations
    - Post survey inquiries highlighted areas of confusion with terminology

Access Methods

- Three Human Interactions
  - **Virtual Control Panel** (VCP)
    Note: was Virtual Function Panel (term “function” caused confusion and is replaced by “control”)
  - CLCS physical **Command Panel**
  - CLCS **Safing System**
- Common Characteristics
  - All require operator action to invoke a stimulus
  - All provide quick repeatable control to effect end-items
  - All work independently from viewed application displays (SL-GMS)

Definitions

- Virtual Control Panel (VCP)
  - S/W implementation, maps CCW function keys to application actions
  - Selectively displayed on the CCW monitor (at the bottom)
- Command Panel
  - Same support as VCP, except through a tactile “push button” interface
  - Supported via a custom KSC built physical panel
  - Interfaces to CCW through the serial port
- Safing System
  - System supports both GSE and LDB “hardwire” safing actions
  - Operates independently of Real-Time Control system/applications
  - Supported via a custom KSC built physical panel

What is Quick Access Safing?

The question that keeps causing confusion...here are some examples:

Quick Access Candidates

- Revert
- Stop Flow
- Emergency Power Down
- Cutoff
- Abort
- Emergency Stop
- FIREX activation
- Pulse Controls (in lieu of mouse)

Display Implementations

- Set LCC Limits
- Select Channel “B”
- Terminate
- Select Sub Display
- Execute
- Decode
- Fill
- Continue

VCP

- Applications Access
  - Initiated by Function key and/or mouse action
  - When VCP is displayed it is “always on top”
  - Visible on both Primary and Secondary CCW monitors
- Applications provide functionality via API through CNS
  - Application provides CNS
    - Mapping of function key to Applications action (End Item Manager method)
    - Text description for VCP display
    - Functions based on User Class assigned to CCW
  - No access to control software (only provides initiation of “safing” functions)
    - Not a window manager
    - Does not support PFP functions like: Re-init, ACK, (S/W) Terminate, etc.

Command Panel

- Applications Access
  - Initiated by press on a physical key
- Applications provide functionality via API
  - API and system interaction TBD
  - Application provides
    - Mapping of physical key to Applications action (End Item Manager method)
    - Text description for command panel display
    - Functions based on User Class assigned to CCW
  - No access to control software (only provides initiation of “safing” functions)
    - Not a window manager
    - Does not support PFP functions like: Re-init, ACK, (S/W) Terminate, etc.

Safing System

- Applications Access
  - None
- This system operates independently from Applications
  - Used in the event of a DCN, RTCN failure
  - Provides quick access to “hardwired” functions
    - GSE
    - LDB

This system does NOT interface with CCW/CCP/DDP processes

Notes

- VCP
  - Methodologies provided to allow User to select appropriate VCP when multiple User Classes are assigned to CCW
  - VCP-CNS API in development
- Command Panel
  - User preference on tactile feel
  - Existing prototype of two LCD windows requires expansion to support necessary actions (probably 4)
  - Presently not part of the CLCS baseline (per ERP direction)
- Safing System
  - In development
  - Terminology provided (in this presentation) for clarification

→ Questions?